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ABSTRACT

Individuation is the process whereby adolescents gradually gain autonomy from their parents while maintaining emotional relatedness, accompanied by a transformation of the parent-child relationship. In everyday parent-child interactions, higher levels of individuation are displayed by characteristic styles of verbal exchanges, such as flexible insisting on one's own opinion in spite of parental opposition, or challenging parent's opinion by asking questions. This study tested the hypothesis that early maturing girls show higher levels of individuation during conflict discussions with their mothers in comparison to same-aged females who are on-time or late maturing. Moreover, it was expected that their mothers would respond in a way that accepts the more grown-up role of the daughter. A sample of 33 female adolescents, ages 9-13, in a middle sized city in a central federal state of Germany, was studied. Their physical maturation, as assessed by the Pubertal Development Scale (Petersen et al., 1988) and validated by testosterone levels, resulted in groups of early, on-time, and late maturers. Mothers and daughters were videotaped during a conflict discussion concerning an everyday problematic issue of their own choosing. The tapes were evaluated by trained raters using a revised version of a Macro-Coding Manual (Holmbeck et al., 1995). The results of separate one-way ANOVAs for adolescent's and mother's responses revealed that early maturers displayed more engagement (i.e., shows initiative, cares for the flow of interchange and solicits input from the other) toward their mothers than on-time maturers. The mothers of the early maturers were less engaging and less open, recommended problem solutions less often, and had less power (i.e., convince the daughter to agree with their own position). This pattern was deemed as indicating higher individuation among the early maturers. Interestingly, late maturers revealed the same conversational behavior as their early maturing age mates but their mothers were more engaging and open, recommended solutions more often, and were more powerful than the mothers of the early maturers. Thus, not only the mother's behavior but the entire interaction pattern is differently structured. Whereas mothers of the early maturing girls seem to accept their daughters' growing individuation in reducing control and influence, late maturers presumably try to show more mature behavior, as a compensation for less advanced physical development, but fail to gain their mothers' acceptance. (Contains 44 references.) (HTH)

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Studying Links between the Timing of Puberty and Psychological Individuation

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Individuation is the process whereby adolescents gradually gain autonomy from their parents while maintaining emotional relatedness, accompanied by a transformation of the parent-child relationship (Youniss & Smollar, 1985). In everyday parent-child interactions, higher levels of individuation are displayed by characteristic styles of verbal exchanges, such as flexible insisting on one's own opinion in spite of parental opposition or challenging parent's opinion by asking questions. In this study we tested the hypothesis that early maturing girls show higher levels of individuation during conflict discussions with their mothers in comparison to same-aged females who are on-time or late maturing. Moreover, we expected their mothers to respond in a way which accepts the more grown-up role of the daughter. A sample of 33 female adolescents (age 9-13) was studied. Their physical maturation, as assessed by the PDS (Petersen et al., 1988) and validated by testosterone levels, resulted in groups of early, on-time and late maturers. Mothers and daughters were videotaped during a conflict discussion concerning an everyday problematic issue of their own choosing. The tapes were evaluated by trained raters using a revised version of a Macro-Coding Manual (Holmbeck et al., 1995). The results of separate one-way ANOVAs for adolescent's and mother's responses revealed that early maturers displayed more engagement (i.e., shows initiative, cares for the flow of interchange and solicits input from the other) towards their mothers than on-time maturers. The mothers of the early maturers were less engaging, less open, recommended problem solutions less often, and had less power (i.e., convince the daughter to agree with their own position). This pattern was deemed as indicating higher individuation among the early maturers. Interestingly, late maturers revealed the same conversational behavior as their early maturing age mates but their mothers, were more engaging and open, recommended solutions more often and were more powerful than the mothers of the early maturers. Thus, not only the mother's behavior but the entire interaction pattern is differently structured. Whereas mothers of the early maturing girls seem to accept their daughter's growing individuation in reducing control and influence, late maturers presumably try to show more mature behavior, as a compensation for less advanced physical development, but fail to gain their mother's acceptance.

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Links between Timing of Puberty and Behavioral Indicators of Individuation

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Paper presented at the Biennial Meeting of the Society for Research on Adolescence, March 30 –April 2, 2000, Chicago, USA, Symposium "Jones and Mussen revisited: Understanding the Link between Pubertal Maturation, Behavior and Personality", Chair: J. S. Dubas

Links between Timing of Puberty and Behavioral Indicators of Individuation

Physical changes during puberty, involving the development of secondary sex characteristics and growth in height and weight, show associations with a variety of social, emotional, relational, and cognitive factors, especially in girls. The changing body is, on the one hand, a private event closely tied to processes of adaptation, such as the integration of the adult-like body into one's self-concept or the need to cope with uncommon feelings and reactions of others (Silbereisen & Kracke, 1997). On the other hand, the development of secondary sex characteristics and transformation of the body silhouette is a public event because the bodily appearance signals the transformation from childhood to adulthood to the surrounding interpersonal contexts (Connolly, Paikoff, & Buchanan, 1997) which, in turn, modulates social expectations towards the adolescent (Alsaker, 1995b). Researchers have focused on pubertal status and pubertal timing. Pubertal status refers to the current level of physical maturation, whereas pubertal timing indicates whether an individual reached a certain pubertal stage at an earlier, the same or a later age compared to same-aged and same-sex peers (Dubas & Petersen, 1993)

Only a few studies found growing pubertal status corresponded to increased psychological difficulties (Connolly et al., 1997; Petersen, Silbereisen, & Sörensen, 1996; Silbereisen & Schmitt-Rodermund, 1998), thus indicating little support for the "stressful change hypothesis" of puberty, which states that all change in association with adolescent development is stressful (Simmons & Blyth, 1987; Dubas & Petersen, 1993). Contrary to this hypothesis, the timing of pubertal change relative to others seems to have a greater impact on psychosocial outcomes, resulting from psychological and social responses by the individual and the interpersonal context to the asynchrony with others (Alsaker, 1995b; Petersen, Leffert, & Graham, 1995).

Empirical tests of the consequences of variations in pubertal timing have been studied with regard to different aspects of psychological functioning (see Kracke & Silbereisen, 1994; Silbereisen & Kracke, 1997; Connolly et al., 1997, Dubas & Petersen, 1993; Silbereisen & Schmitt-Rodermund, 1998 for reviews). The classical work by Jones and Mussen (1958) identified profiles of characteristics that differentiate early and late maturing girls, indicating, for example, lower popularity of the early maturers amongst same-aged peers. Recent research showed that early maturation in girls is accompanied by more negative self-evaluations (e.g. Wichstrom, 1999), more intensive and variable states of negative mood (e.g. Buchanan, Eccles, & Becker, 1992), and more frequent engagement into precocious and norm-breaking activities, such as under-age alcohol drinking or cigarette smoking (Stattin & Magnusson, 1990).

With regard to the effects of pubertal timing on interpersonal relationships, research has focused, on the one hand, on romantic relationships and found that early maturing girls tended to affiliate with older peers of the same maturational status (Stattin & Magnusson, 1990) which, in turn, become socialization agents and behavioral role models (Alsaker, 1995a). On the other hand, when family conflict and cohesion affected by pubertal timing were analyzed, longer and more intensive periods of heightened conflicts were found in families of early maturing girls (Holmbeck & Hill, 1991). With regard to other aspects of interpersonal development, such as qualitative changes in interactional behavior within parent-adolescent relationships, empirical evidence is limited (Paikoff & Brooks-Gunn, 1991). Hauser et al. (Hauser, Liebmann, Houlihan, Powers, Jacobson, Noam, Weiss, & Follansbee, 1985) investigated communication behaviors of pubertal girls and their mothers. Girls with early pubertal timing argued more often in favor of their own positions against that of their mothers and changed the conversational topic during conflict discussions less frequently than either on-time or late maturing girls.

Until now there is a lack of unifying interpretations for the results just reported. The only existing framework are the deviance hypothesis ("off-time hypothesis"; Books-Gunn, Petersen, & Eichorn, 1985) and the stage termination hypothesis ("early timing hypothesis"; Graber, Petersen, & Brooks-Gunn, 1996) which both in the main concern problem behaviors of the internalized or externalized type. We propose that the common denominator of the more autonomous behavior and the higher level of conflict observed among early maturing girls is their more advanced level of autonomy as conceptualized in the individuation theory framework (Youniss & Smollar, 1985; Grotevant & Cooper, 1985).

The process of individuation across adolescence is characterized by two features. First, it involves the development of a self-concept independent from the parents (White, Speisman, & Costos, 1983) and growing personal autonomy in thinking and behavior (Youniss & Smollar, 1985; Grotevant & Cooper, 1985). Behavioral manifestations for this process in family interactions are the expression of negative affect towards parents (Montemayor, Eberly, & Flammery, 1993), more questions and suggestions (Hakim-Larson & Hobart, 1987, Hofer & Sassenberg, 1997), arguments in opposition to parental opinion (Bosma, Jackson, Zijsling, Zani, Ciogniani, Xerri, Honess, & Charman, 1996), or more assertiveness and influence on the parents' opinion (Pinquart & Silbereisen, 1999). Second, at the same time, emotional connectedness to parents is maintained because positive emotional family relationships are functional for adolescents as a source of social support and validation of the forming self (Youniss & Ketterlinus, 1987; Petersen et al., 1995). In this sense, individuation becomes a developmental task not only for the adolescent but for the whole family (Boxer, Tobin-Richards, & Petersen, 1984).

Analyses of discourse behaviors of adolescents and their parents within the individuation framework have demonstrated that parents reduce the share of controlling statements towards their children through adolescence (Hofer et al, 1993; Pikowsky, Hofer, Spanz-Forgasy, & Fleischmann, 1993), thus indicating the ongoing restructuring of family

relationships (Ng, 1990). The interactive process of individuation, which is promoted by settling conflicts, reflects the transformation of the parent-child relationship (Laursen & Collins, 1994) from unilateral, parent-dominated to a more egalitarian, symmetrical, and reciprocal type of relationship between the parent and the adolescent (Youniss, 1980).

The aim of the present study was to investigate whether the behavioral manifestations of individuation in parent-adolescent communication differ as a function of pubertal timing. Based on individuation theory we wanted to analyze the specific features of discourse behaviors between early maturing girls and their mothers in a systematic and comprehensive way. First, we predicted that within mother-daughter dyads early maturing girls would display behaviors representing *Separation Individuation* more frequently than dyads including on-time or late maturing girls. In behavioral conflicts, such behaviors are assertiveness in maintaining one's position, rejection of the mothers' suggestions, and influencing their opinion forcefully. Our second expectation relates to *Control/Initiative*. We predicted early maturing girls to display initiatives and attempts to control the discussion more frequently. Accordingly, we predicted less controlling and guiding initiatives by the mothers towards the early maturing daughters during conflict discussions, also reflecting the ongoing transformation to more symmetrical adolescent-parent relationships. These expectations were based on the assumption that early maturing girls' striving for autonomy had already lead to more frequent conflicts in the recent past which, in turn, promoted the transformation of the parent-adolescent relationship (Hofer et al., 1993) and the individuation of the adolescent (Youniss & Smollar, 1985). Thus, communication behavior of early maturing girls and their mothers should reflect more individuated family relationships.

Third, as for behavioral indicators of *Connectedness*, we predicted no differences between the girls with different pubertal timing. Previous research has shown that the process of individuation does not require the detachment from the parents (Steinberg, 1990) and that close relationships with the parents continue (Petersen et al., 1995).

In order to demonstrate the uniqueness of the predictor effects of pubertal timing, parallel analyses were conducted in which we compared the same behaviors in mother-daughter dyads as a function of differences in pubertal status.

METHOD

Sample

We analyzed data of 33 mother-daughter dyads discussing an everyday conflict in a laboratory setting[1]. The mean age of the participants was 12.2 years (SD=.99) for the girls and 36.6 years (SD=1.92) for the mothers. All participants lived in a middle-sized city located in a central federal state of Germany and came from families with a middle class income (mean income approx. 4000 DM / month).

Measures

Pubertal status: To assess the status of physical development in puberty we administered the verbal self-report measure Pubertal Development Scale (Petersen, Crockett, Richards, & Boxer, 1988). The scale consists of three items concerning breast change and pubic hair growth (1= not begun to 4= development completed), and menarcheal status (1= no and 4= menarche occured). The three ratings were averaged to form the pubertal status score. The internal consistency of the scale accounted to .65 and the mean of the score was 2.45 (SD=.76). The scale correlated positively with other measurements of the girls' pubertal status, such as self-reports and mothers' reports utilizing Tanner Stages (Tanner, 1974), and with concentration level of saliva testosterone. Based on the cutt-offs reported by Wichstrom (1999), the pubertal development score was categorized into three groups: those with pre and early pubertal status (at the beginning of puberty, N=12), those at the peak of pubertal

[1] The observational study was part of the project „Biopsychosocial Mechanisms of the Development of Maladaptive Behaviors of Girls in Early Adolescence" funded by the Thuringian Minister of Science, Research and Culture (B 301 96060), Principal Co-investigators: R. K. Silbereisen & W. Miltner

changes (N=10) and, those characterized by late or post pubertal status (at the end of puberty, N=11). Differences in the three groups were age-related in that the older girls were the more physically mature ($F(2)=9.52$, $p<.01$).

Pubertal timing: Timing of puberty was assessed as deviation relative to the central tendency in the status scores. To utilize a broader basis for this procedure we used the data on the pubertal status of the study girls plus a sample of their same-aged female friends who completed the same questionnaire on physical maturation. The whole sample (N=63) was grouped by age into four groups. Within each age group the pubertal development score was *z*-standardized (see Alsaker, 1992; Schmitt Rodermund, 1997). The normative (on-time) developmental tempo within each of the age groups was defined by +/- 1 standard deviation from the mean. Those girls with *z*-scores lower than –1 represented the late maturing adolescents and those with *z*-scores higher than +1 the early maturing adolescents. This procedure resulted into three groups of early (N=11), on-time (N=11), and late maturing (N=6) girls in the target sample. The three groups did not differ significantly in their age ($F(2)=2.49$).

Communication behavior: The girls and their mothers were videotaped while they discussed an everyday conflict for 10 minutes in the laboratory setting. The topic of conflict was self-defined. To evaluate the videotapes and to operationalize the behavioral indicators drawn from the individuation theory framework, we utilized a version of the coding manual "Family Macro-Coding Manual – March of Dimes Triadic Version" (Holmbeck, Belvedere, Corey-Ferguson, & Schneider, 1995), adapted for the current study by Srugies (1997). The coding refers to the entire sequence of interactions in the dyad (macro-coding) rather than to separate linguistic units. The manual entails 13 behavioral categories: 11 concern the behavior of the two interaction partners, the remaining two describe the quality of the dyadic interaction. The observers' judgements are given on a 5-point rating scale. The inter-rater reliability averaged over all categories was $\kappa_w=.81$ (Weighted Kappa; Cohen, 1968).

The categories of the coding system were used as estimates of Separation/Individuation, Control/Initiative and Connectedness. (1) *Separation Individuation* was operationalized by the categories Confidence in Stating Opinions, Rejection, and Power. Confidence is defined by speaking in a forceful and convincing matter (girls M/SD=3.42/.90, mothers 3.88/.65). Rejection means disapproval of the other person and critic of the other's thoughts, ideas and behaviors (girls 2.97/1.13, mothers 3.03/.95). The category Power indicates to what extent one person can influence the opinion, thoughts, or actions of the other (girls 2.21/.70, mothers 2.94/.83). (2) *Control/Initiative* were operationalized by Suggesting Input and Attempting Resolutions. Suggesting input from the other person means activities to include the other in the interaction by asking questions and gestures which request input (girls 2.09/.68, mothers 3.52/1.00). Attempted Resolution of Issues (girls 1.85/.62, mothers 2.39/.70) means working toward resolution of the current disagreements and differences. (3) *Connectedness* is reflected by Warmth and Receptiveness. Warmth covers statements reflecting love, care, consideration for and interest in the other person (girls 2.82/.92, mothers 3.24/.97). Receptiveness to Statements made by the other means being open and amenable within the mother-daughter dyad (girls 2.91/.80, mothers 3.61/.80; see Appendix).

The matching of theoretical constructs stemming from individuation theory and behavioral categories is concordand with the operationalization of other authors (e.g. Allen, Hauser, Eickolt, & Bell; 1994) and was verified empirically using our sample: (1) the behavioral categories within one construct correlated positively, and (2) explorative factor analysis (principal component) resulted in one factor including all categories for Separation/Individuation and Control/Initiative (explained variance of the first factor 34%). A second factor included all categories selected for Connectedness (explained variance of the second factor 25%).

Data Analysis

To test our hypotheses we compared the mean ratings of the behavioral categories of the girls and their mothers by one-way ANOVAs with a priori contrasts (SPSS, Norusis, 1993) across the groups formed by pubertal timing and pubertal status of the daughter, respectively. In order to control for the effects of the girls' age on the outcome variables, age was partialed out.

RESULTS

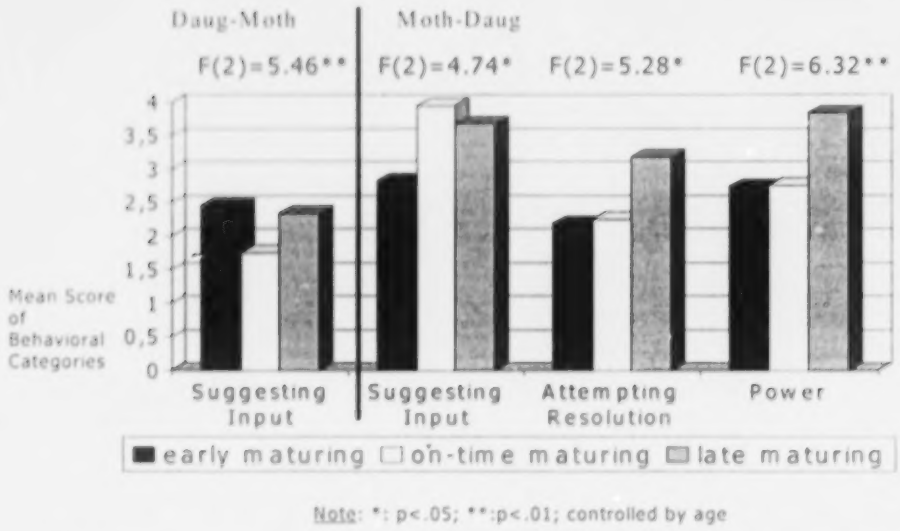
Pubertal Timing Effects

Concerning the *girls' behaviors*, against our first prediction, we found no differences between the pubertal timing groups in Separation/Individuation, represented by the behavioral indicators Confidence, Rejection, and Power. Furthermore, in line with our expectations, the early maturers differed in one aspect of Control/Initiative, namely in Suggesting Inputs from their mothers. The same applied, however, to the late maturing girls. Both, the early and late maturers, suggested inputs from their mothers more frequently than girls showing on-time maturation ($F(2)=5.46$, $p<.01$). Finally, the indicators of Connectedness in the girls, i.e. Warmth and Receptiveness, did not differ for the three pubertal timing groups, which supports our hypothesis. It should also bee noted that only one of seven effects tested was significant.

As for the *mothers' behaviors*, we found significant differences in the expected direction concerning Separation/Individuation and Control/Initiative. We found differences with regard to Power as one of the three indicators for Separation/Individuation, that is, the mothers of the early maturing girls showed less Power compared to the mothers of late maturing girls ($F(2)=6.32$, $p<.01$). Furthermore, mothers of early and on-time maturers Attempted Resolution of issues less often compared to those of the late maturing girls ($F(2)=5.28$, $p<.05$). In addition, mothers of early maturing girls Suggested Inputs less frequently ($F(2)=4.74$, $p<.05$). Both behaviors indicate less Control/Initiative of mothers

interacting with early maturing daughters. Finally, as expected, we found no differences between the three pubertal timing groups with regard to mothers' Connectedness. Note that three out of seven tested effects were significant. Figure 1 shows the significant mean differences for daughters and mothers, respectively, for the three timing groups.

Fig. 1: Significant Effects of Pubertal Timing



Note: *: p<.05; **:p<.01; controlled by age

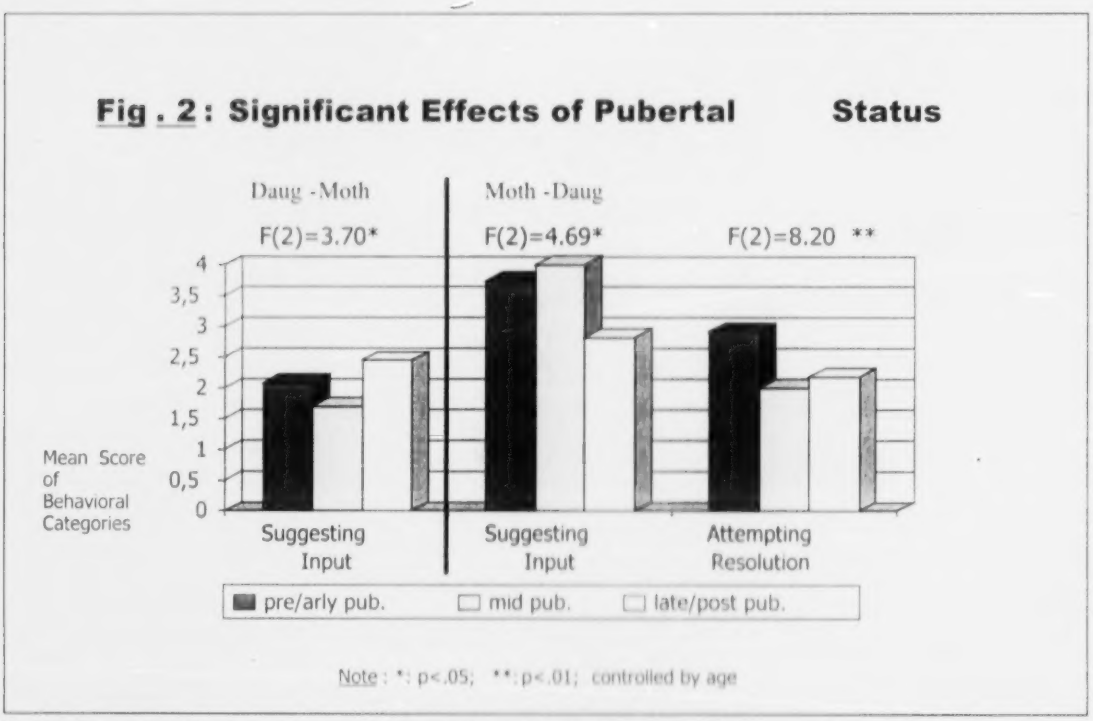
Note: Daug-Moth: daughter towards mother; Moth-Daug: mother towards daughter

Pubertal Status Effects

Concerning the *girls' behaviors* we found no significant effects of pubertal status with regard to Separation/Individuation. In Control/Initiative we found girls at the end of pubertal maturation Suggesting Input from their mothers more often than girls of the other two groups ($F(2)=3.70$, $p<.05$). For Connectedness, there were no significant effects of pubertal status.

As for the *mothers' behaviors*, we found no significant differences between the three groups concerning Separation/Individuation. With regard to Control/Initiative, however, there was a significant difference in both indicators. First, mothers of pre and early pubertal girls

were highest in Attempting Resolutions of issues ($F(2)=8.20$, $p<.01$). Second, mothers of late or post pubertal girls were lowest in Suggesting Input ($F(2)=4.69$, $p<.05$). For mothers' Connectedness, again there were no significant differences between the pubertal status groups. Figure 2 shows the significant mean differences (three out of 14) for daughters and mothers, respectively, for the three status groups.



Note: Daug-Moth: daughter towards mother; Moth-Daug: mother towards daughter

DISCUSSION

The current study addressed differences in conflict discussions between adolescent girls and their mothers in association with the girls' pubertal maturation. The interpretation of the communication behavior was based on individuation theory, which describes the adolescent period as growing separation from the parents while maintaining a close emotional relationship to them (Youniss & Smollar, 1985). The results on early adolescent girls indicate

that pubertal timing seems to have only a slightly stronger association with behavioral manifestations of individuation than does pubertal status.

As for the pubertal timing effects, we found significant differences in Separation/Individuation and Control/Initiative. First, mothers revealed less influence on the daughters' ideas, thoughts, and opinions than the mothers of the late maturing girls and they were lower in exhibiting Power. Second, early maturers (and late maturers, too) displayed more Control and Initiative during conflict discussions towards their mothers than on-time maturers, caring for the flow of interchange and soliciting input from the mother. Accordingly, mothers of early and on-time maturers were lower in Control/Initiative, i.e., they Suggested Input and Attempted Resolutions less frequently than mothers of late maturers. This interactional pattern within the dyad of the early maturing girls and their mothers reflects a more symmetrical relationship and higher level of Separation/Individuation compared to age mates with on-time or late maturational timing. In terms of connectedness, we did not find differences between the three timing groups, which was in line with our expectations.

Interestingly enough, although the late maturing girls revealed similar conversational attempts to gain control as the early maturers, their mothers did not show reactions to this, i.e., by reducing control (see Hofer & Sassenberg, 1997). Rather, the mothers of the late maturing girls were more controlling and powerful than the mothers of the other groups. Thus, the interactional pattern looked different between the early and late maturers. Whereas the early maturing girls' mothers seem to accept their daughters' growing individuation by reducing control and influence during conflict discussions, the mothers of the late maturers did not accept their daughters' attempts towards a more mature pattern of behavior.

The late maturing girls' behavior in the conflict discussion may reflect a strategy to compensate for their less advanced physical development. Both groups seem to have an interest in striving for autonomy from their parents. In the early maturing girls this is expressed as an age-inappropriate demand for personal and behavioral autonomy (Alsaker,

1995a). However, the late maturing girls' initiatives within the discourse could represent attempts to actually gain age-adequate freedom by their parents, which was confined because of the immature bodily appearance (Johnson & Collins, 1988).

In our view, the current results of the late maturers are reminiscent of earlier research by Jones and Mussen (1958) which demonstrated a less adequate self-concept and poorer parent-child relationships in late maturing girls as indicated by TAT stories. Here was found that significantly more late maturing girls seemed to seek fame and high prestige status than early maturers. Furthermore, the late maturing girls appeared to be more dominated by their parents, displayed a greater tendency to defy authority, and exhibited greater dependency needs than early maturing girls. In the late maturers' strong attempts to control the discussion by being active within the mother-daughter dyad, we see a resemblance to the defying behaviors reported by Jones and Mussen (1958). However, the obvious differences in the methodologies call for a cautious interpretation.

In accordance with our hypothesis, the girls did not differ in connectedness and emotional relatedness towards their mothers during conflict discussions regardless of their pubertal timing. This is in line with individuation theory, postulating the maintenance of emotional connectedness and growing autonomy and separation in parent-adolescent relationship at the same time (Youniss & Ketterlinus, 1987).

Concerning pubertal status, we found a significant difference for Control/Initiative only. Unexpectedly, with the exception of the mothers' Power indicating higher Separation/Individuation in the early maturing girls, the results of the analysis of pubertal status were almost identical to pubertal timing. Does this mean that against the general belief in the literature, pubertal status is as important as pubertal timing? Probably not. The reason is most likely to lie in a particularity of the sample: it was not only small, but also confined with regard to higher status groups. Consequently, the status measure here is not too different from the timing measure.

The current study and results are also subject to various limitations. First, the small sample size is a problem which cannot be resolved. Second, we only analyzed the current association between communicative behaviors in parent-adolescent conflicts and pubertal timing. Consequently, we do not know anything about antecedents and consequences. It is clear, for instance, that certain qualities in social relationships may have an influence on the pace of maturation during puberty (see Belsky, Steinberg, & Draper, 1991). Third, we interpreted between-group differences in certain communication behaviors as signs of growing individuation in the context of autonomy development. Although it would seem plausible that higher levels of confidence and less insistence in maintaining one's position are valid indications for individuation, independent evidence is required. As a first step we have correlated the observed communication behavior with a questionnaire designed to test individuation towards the mother (Munich Individuation Test, Walper, 1997). It was encouraging to see that high confidence, warmth, receptiveness by mothers and daughters and low rejection by the mothers towards their daughters in the conflict discussions were associated with successful individuation as measured in the questionnaire.

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APPENDIX

Descriptions of Behavioral Categories

Confidence in stating opinions

The extent to which a person demonstrates confidence in speaking. A confident family member speaks out forcefully and convincingly. Nonverbal behaviors (e.g., gestures) support the verbal expression. A person who lacks confidence almost never offers own reasons and ideas; answers are tentative and unsure.

5 = very much 4 = much 3 = some 2 = little 1 = not at all

Suggests input from other family member

The extent to which a person suggests input; person makes verbal and nonverbal gestures to include the other family member in the interaction; shows interest in the opinions and ideas of the other by asking questions, verbalized requests, and gestures which indicate request for input. Verbal: addressing the other by name, requesting direct opinions about the issue under discussion (e.g., asking questions). Nonverbal: hand movements and gestures which request input from other family member. A person who does not suggest input limits the other's participation in the interaction and their chance to express own thoughts. Low attention and interest in the ideas and opinions of the other family member is shown.

5 = always 4 = mostly 3 = some times 2 = seldom 1 = never

Receptiveness to statements made by the other family member

Participants are rated as being open and amenable to others' thoughts, ideas, and feelings. Openness and receptiveness can be indicated through verbal and nonverbal statements that show understanding and interest for other members in the family. A very receptive person is attentive and willing to consider other member's thoughts and reflects on them, and, is willing to incorporate the other's point of view into own statement. A very unreceptive person rejects or does not consider other's thoughts, and often interrupts the other family member.

5 = very receptive 4 = fairly receptive 3 = somewhat receptive 2 = barely receptive 1 = not receptive

Attempted resolution of issues

Participants are deemed to be working toward resolution of issues when they make suggestions to change or work on current disagreements and differences. An answer is coded as resolution if it goes beyond the present state of the problem. Attempted solutions do not have to be a compromise but may also support the own point of view. A person who always generates suggestions consistently provides suggestions for how differences may be resolved, as well as how to implement changes. A person who never generates suggestions give no suggestions or ideas for working towards resolution.

5 = always 4 = mostly 3 = some times 2 = seldom 1 = never

Warmth

Warmth is shown through verbal and nonverbal behaviors. A person who is very warm frequently expresses care, love, and consideration. *Verbal*: Statements reflecting love, care, consideration for, and interest towards other's feelings. Person verbalizes positive affection towards the other family member. *Nonverbal*: touches affectionately, playfully and caringly. Seeks proximity. A person who does not show warmth shows no positive feelings towards the other family member and does not react positively towards the care, love, and consideration shown by the other family member.

5 = very warm 4 = fairly warm 3 = somewhat warm 2 = little worm 1 = not warm

Rejection

A very rejecting person becomes physically and psychological estranged from the other family member; shows disapproval of the other person, attacks, criticizes the other's thoughts, feelings, and behavior, rebukes or ignores the other family member. A non-rejecting person does not become estranged from the other family member; does not attack or disapprove of the other; accepts the other's thoughts, behavior.

5 = very rejecting 4 = fairly rejecting 3 = somewhat rejecting 2 = little rejecting 1 = not rejecting

Power

The extent to which one member of the family influences the other's opinions. A very powerful person shows power by influencing the thoughts, actions, and ideas of the other, either through reasoning, or through imposing one's thoughts and ideas on the other person, or through one's ability to control. The power one member has can be expressed through the respect shown by the other family member.

5 = very powerful 4 = fairly powerful 3 = somewhat powerful 2 = fairly powerless 1 = very powerless

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